REMARKS

By this amendment, claim 1 has been revised to place this application in condition for allowance. Currently, claims 1-6 are before the Examiner for consideration on their merits.

First, Applicants would like to clarify the status of the claims. The claims recited above are those claimed that were amended during the PCT phase of this national stage application. The reason that this is being brought to the Examiner's attention is that the reference to clause (d) of claim 1 in the current rejection is believed to recite language found in the original claims, not those as amended during the PCT proceedings. These amended claims were submitted as part of the filing of this national stage application, and it is these claims that should be before the Examiner for consideration on their merits.

Applicant's attorney would also like to thank Examiner Holmes and his supervisor, Mr. Knight for their assistance in dealing with the rejection under 35 U.S.C. § 101.

In review, the Examiner has rejected claims 1-6 under 35 U.S.C. § 101 on the grounds that, although the invention is directed to technological arts, the claim language is not limited to practical applications. In response to this rejection, claim 1 has been revised to meet the requirements of 35 U.S.C. § 101 and the new PTO Guidelines. That is, the training step of claim 1 is revised to state that the training vector MO_i comprises objective measurements taken from the signals of the audiovisual sequence. Support for this limitation may be found in the specification on page 11, line 30 to page 12, line 2.

It is also contended that this amendment falls in line with the new guidelines published by the PTO regarding rejections under 35 U.S.C. § 101, and that the rejection of claims 1-6 is believed to be overcome. Claim 1 is now directed to a method which now involves degradations identified in a training vector, wherein the training vector further comprises objective measurements taken from the signals of the audiovisual sequence.

In the rejection, the Examiner has characterized the invention as falling into one of the three judicial exceptions of an abstract idea, law of nature or natural phenomena without a practical application thereof. More particularly, the Examiner alleged that the invention was nothing more than a computational model of a function or equation.

It is now respectfully contended that claim 1 is more than merely an equation or an abstract idea. Instead, claim 1 now involves the use of a training vector that comprises an objective measurement of an audiovisual sequence, and this is clearly more than the computational model of an equation. Put another way, the invention is not one of the judicial exceptions outlined in the PTO Guidelines that are excluded from patentability. In fact, the invention is even more than just a practical application of one of the judicial exceptions that would be considered statutory under the new guidelines. The invention uses a training vector as part of this methodology, wherein the training vector comprises the objective measurement of an audiovisual sequence. This alone makes the invention more than just an abstract idea, law of nature or natural phenomena. Accordingly, it is respectfully requested that the rejection based on 35 U.S.C. § 101 be withdrawn.

Turning now to the prior art rejection, the Examiner has maintained the rejection of claims 1-6 under 35 U.S.C. § 103(a) based on based on the Quincy et al. article entitled

"Expert Pattern Recognition Method and for Technology-Independent Classification of Video" (Quincy 1988) when taken in view of the Quincy et al. article entitled "Speech Quality Assessment Using Expert Pattern Recognition Techniques" (Quincy 1989).

In the response to Applicants' arguments, the Examiner makes the following points:

1) figures 1 and 2 of Quincy 1988 teach the use of a database; and

2) specifying a particular signal is of no patentable significance and this aspect of the invention does not make the invention patentable.

Applicants contend that the reasoning to maintain the rejection is flawed, and the prior art of Quincy 1988 and 1989 still fails to establish a *prima facie* case of obviousness against the claims.

The Examiner has oversimplified the issues of patentability in this case. That is, the noted differences between the teachings of Quincy 1988 and 1989 and the invention do not boil down to the Applicants' use of a database and the particular type of signal to be evaluated. Instead, the differences are more fundamental and these differences evidence the fact that Quincy 1988 and 1989, even if combined, do not teach or suggest the invention.

A key distinction relating to the issue of patentability is the use of probabilities in the expert systems of Quincy 1988 and 1989 and the use of vectorization in the invention. Quite clearly, Quincy 1988 relies on expert systems that involve probabilities. The abstract of Quincy 1988 states "The system provides quality of classification on a minimum probability of error basis relative to subjective classification." This is explained in the

design of the classifier as detailed on page 1306 of Quincy 1988, section C entitled "Statistical Pattern Recognition Classifier Module".

In contrast to the expert system of Quincy 1988, the present invention uses vectorization as detailed in claim 1(a) and the calculation of a minimal distance as detailed in claim 1(d). Claim 1(a) sets forth a specific training regimen as follows:

> a) training, comprising allocating a subjective score NS_i to each of N_0 training sequences S_i (where $i = 1, 2, ..., N_0$) presenting degradations identified by a training vector MO_i comprising objective measurements taken from the signals of the audiovisual sequence which is given to each sequence S_i in application of a first vectorizing method, in order to build up a database of N_0 training vectors MO_i with corresponding subjective scores NS_i;

In the rejection, the Examiner merely cites Section B, the "Proposed Solution" and Section C, "Statistical Pattern Recognition Classifier Module" to support the allegation that the training step is taught. Quincy 1988 does not teach the steps recited in claim 1(a). The Examiner is again called upon to substantiate the basis for the allegation that the training step of claim 1(a) is found in Quincy 1988. The mere fact that Quincy 1988 speculates on a final product that will make objective parameter measurements from each end and may map the vector of parameter values into one of M classes of quality does not equate to the training step of claim 1(a).

Section C of Quincy is no more pertinent than Section B. This section deals with design of the classifier using probabilities, with a probability calculated in equation 3, col. 1 of page 1306.

It is Applicants' contention that the cited sections of Quincy 1988 do not teach the limitations of claim 1(a) and the rejection cannot stand for this reason alone. The Examiner is called upon to substantiate any further rejection with explicit reference to the basis for asserting that the claimed training step is taught in Quincy 1988. Applicants specifically request more than a recitation of the claim and reference to a section of Quincy 1988.

Similarly, the reliance on Quincy 1988 to teach claim 1(d) is also flawed. In the rejection, the Examiner cites the very same sections B and C to reject step (d). No other explanation is given in the rejection other than the recitation of the claim language and citation to Quincy 1988. Claim 1(d) recites:

d) allocating to the audiovisual sequence for evaluation the significant training score NSR_j that corresponds to the closest training set EA_j.

Where in Quincy 1988 is the allocating of a significant training score that corresponds to the closest training set? In fact, there is no such step in Quincy 1988 and the rejection fails for this reason. The approach used with respect to step (d) of claim 1 is also insufficient to establish a rejection under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a).

For the reasons above, Quincy 1988 cannot be said to teach all of the limitations of claim 1 and the rejection must be withdrawn for this reason.

The same reasoning set forth above applies to claim 2, i.e., the broad reference to and reliance on Sections B and C of Quincy 1988 to support the allegation that the second vectorization step is taught is flawed. Similar to the query above, where is the second vectorization step of claim 2 in Sections B and C of Quincy 1988? The Examiner has again failed to meet the burden imposed on the PTO to make out a *prima facie* case of

anticipation or obviousness. Thus, the rejection of claim 2 is also in error and must be withdrawn.

Quincy 1989 does not supply the deficiencies in Quincy 1988 as identified above. If anything, the reliance on Quincy 1989 only reinforces Applicants stance that Quincy 1988 is a probability-based expert system, not one that employs vectorization for evaluation of the audiovisual sequence.

Referring to the rejection of claim 3, the Examiner points to Figure 5, page 210, left column, paragraph 2, to support the rejection. This part of Quincy 1989 clearly refers to probabilities which are typical of an expert system and analogous to the system employed in Quincy 1988.

For claim 5, the cited passageway in Quincy 1989 is page 208 and the System Overview. As with the description on page 210 of Quincy 1989, the cited system uses probabilities not vectorization for evaluation.

For claim 6, the Examiner cites the same page 208, especially subjective scores, and references the Section entitled "Classification and Mean Opinion Score Prediction" found on page 209 and Figure 3 of page 210. This citation again shows that Quincy 1989 is an expert system using probabilities and is clearly not a system that employs vector classification or vectorization and the determination of a minimal distance.

For each of the rejections of claim 3, 5, and 6, the Examiner has failed to meet the burden imposed by the PTO, i.e., demonstrate that the claimed invention does not deserve patent protection. Lacking such a basis to reject claims 3, 5, and 6, these claims are separately patentable over the applied prior art.

While this amendment is made after final rejection, its entry is respectfully requested. The amendments to claim 1 are made primarily to overcome the rejection under 35 U.S.C. § 101, and making these changes does not raise a new issue requiring further search and/or consideration. Also, the reasons in support of patentability and the deficiencies in the teachings of Quincy 1988 and 1989 have been already put in front of the Examiner, and these reasons clearly demonstrate that the rejection could not be sustained on appeal.

Since the amendment to claim 1 overcomes the rejection under 35 U.S.C. § 101, it should be entered at least for purposes of appeal. This will remove this issue from the appeal process, and allow Applicants to seek review of the rejections should the Examiner maintain the present position based on Quincy 1988 and 1989.

In summary, it is Applicants contention that all issues have been addressed in this paper, and the claims are statutory under 35 U.S.C. § 101, and both novel and unobvious under 35 U.S.C. §§ 102(b)/103(a). Accordingly, the rejections based on Quincy 1988 and 1989 should be withdrawn and claims 1-6 should be passed onto issuance.

If the Examiner believes that an interview with Applicants' attorney would be helpful in expediting allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.
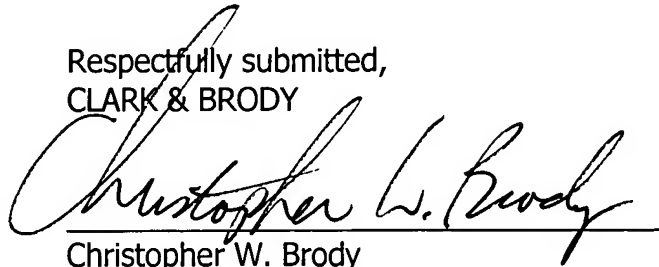
The above constitutes a complete response to all issues raised in the Office Action dated January 25, 2006.

Again, reconsideration and allowance of this application is respectfully requested.

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Respectfully submitted,
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